

CLAIMS

What is Claimed is:

1. An transponder system, comprising:  
an amplifier network having a plurality of amplifiers;  
5 an antenna network, comprising a plurality of antennae;  
an output switching network, including a first output switching network switch,  
selectably coupling one of the amplifiers to one of the plurality of antennae at a first  
output switching network switch first switch state and to a second output switching  
network switch in a first output switch network switch second switch state; and  
10 wherein the second output switching network switch is selectably coupled to a  
second one of the plurality of antennae in a second output switching network switch first  
switch state and to a third one of the plurality of antennae in a second output switching  
network switch second switch state.
2. The transponder system of claim 1, wherein:  
15 the output switching network defines a plurality of signal paths between a first  
amplifier of the set of amplifiers and a first antenna of the set of antennae, the  
communication paths including:  
a first signal path from the first amplifier to the first antenna via the first output  
switching network switch and not the second output switching network switch; and  
20 a second signal path from the first amplifier to a second antenna of the antennae  
network via the first output switching network switch and the second output switching  
network switch..
3. The transponder system of claim 2, wherein:  
the first signal path is a primary signal path and the second signal path is a backup  
25 signal path.

4. The transponder system of claim 1, wherein the output switching network is a single rail switching network.

5. The transponder system of claim 1, further comprising:

an input switching network, having a plurality of input switching network inputs,  
5 a plurality of input switching network outputs, and a plurality of input switches selectably communicatively coupling the input switching network inputs with the input switching network outputs, and

wherein the input switching network outputs are communicatively coupled to the amplifier network.

10 6. The transponder system of claim 5, wherein the input switching network is a single rail input switching network.

7. The transponder system of claim 6, wherein

the input switching network is communicatively coupled to the amplifier network via a routing switch network having a plurality routing switch network inputs  
15 communicatively coupled to the plurality of input switching network outputs, a plurality of routing switch outputs communicatively coupled to the amplifier network, and a plurality of routing switches, selectably communicatively coupling the routing switch network inputs to the routing switch network outputs.

20 8. The transponder system of claim 7, wherein the routing switch network is a single rail input switching network.

9. The transponder system of claim 8, wherein the routing switch network is communicatively coupled to the amplifier network via a driver network having a plurality of driver network inputs communicatively coupled to a plurality of driver network outputs via a plurality of driver network drivers.

10. The transponder system of claim 7, wherein:  
the antenna network comprises a first group of antennae and a second group of antennae;

each of the driver network drivers is communicatively coupled to an antenna in  
5 the first group of antennae and an antennae in the second group of antennae.

11. A network, comprising:  
an first device network having a plurality of first devices;  
a second device network, having a plurality of second devices;  
a single rail output switching network, communicatively coupling any of the  
10 second devices with any of the first devices.

12. The network of claim 11, wherein:  
the plurality of first devices includes a first group of first devices and a second  
group of first devices;  
the plurality of second devices include a first group of second devices associated  
15 with the first group of first devices and a second group of second devices associated with  
the second group of first devices.

13. The network of claim 12, further comprising:

a third device network, having:

a plurality of inputs including a first input group and a second input group;

a plurality of outputs including a first output group and a second output

5 group;

wherein:

the first output group is communicatively coupled to the first amplifier

group;

the second output group is communicatively coupled to the second

10 amplifier group;

each output of the second output group is communicatively coupled to at least one of the inputs in the first input group; and

each output of the first output group is communicatively coupled to at least one of the inputs in the second input group.

15 14. The network of claim 13, wherein the first output group is communicatively coupled to the first group of second devices and the second output group is communicatively coupled to the second group of second devices.

15. The network of claim 13, wherein the plurality of third device network inputs are communicatively coupled to a single rail input switching network.

20 16. The network of claim 11, wherein:  
the first device network is an antenna network and the first devices are antennae;  
and  
the second device network is an amplifier network and the second devices are amplifiers.

17. The network of claim 13, wherein the third device network comprises a driver network comprising a plurality of drivers or a frequency converter network comprising a plurality of frequency converters.

18. A method of providing a signal to any one of a plurality of output devices,  
5 comprising the steps of:

receiving the signal in a first switch;

selectably coupling the signal to a first output device or a second switch via a first switch according to a first switch selection; and

selectably coupling the signal from the first switch to a second output device or a  
10 third output device if the signal is not coupled to the first output device via the second switch according to a second switch selection.

19. The method of claim 18, further comprising the step of:

selectably decoupling the signal from the first switch and coupling a backup input signal to the first switch if the input signal is unavailable.

20. An apparatus for providing a signal to any one of a plurality of output  
15 devices, comprising:

a first switch for receiving the signal and for selectably coupling the signal to a first output device or a second switch via the first switch according to a first switch selection; and

20 a second switch for selectably coupling the signal from the first switch to a second output device or a third output device if the signal is not coupled to the first output device via the second switch according to a second switch selection.

21. The apparatus of claim 20, wherein the first switch selectably decouples  
the signal from the first switch and coupling a backup input signal to the first switch if the  
25 input signal is unavailable.

22. An apparatus for providing a signal to any one of a plurality of output devices, comprising the steps of:

means for receiving the signal;

first means for selectably coupling the signal to a first output device or a second

5 selectably coupling means, wherein the second selectably coupling means selectably couples the signal from the first selectably coupling means to a second output device or a third output device if the signal is not coupled to the first output device.

23. The apparatus of claim 22, further comprising the step of:

selectably decoupling the signal from the first switch and coupling a backup input

10 signal to the first switch if the input signal is unavailable.